Continental Drift

Essential Standard 2.1: Explain how processes and forces affect the lithosphere

Objective 2.1.1: Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

Puzzle Pieces

Early Cartographers noticed that the continents fit together like puzzle pieces

Impossible

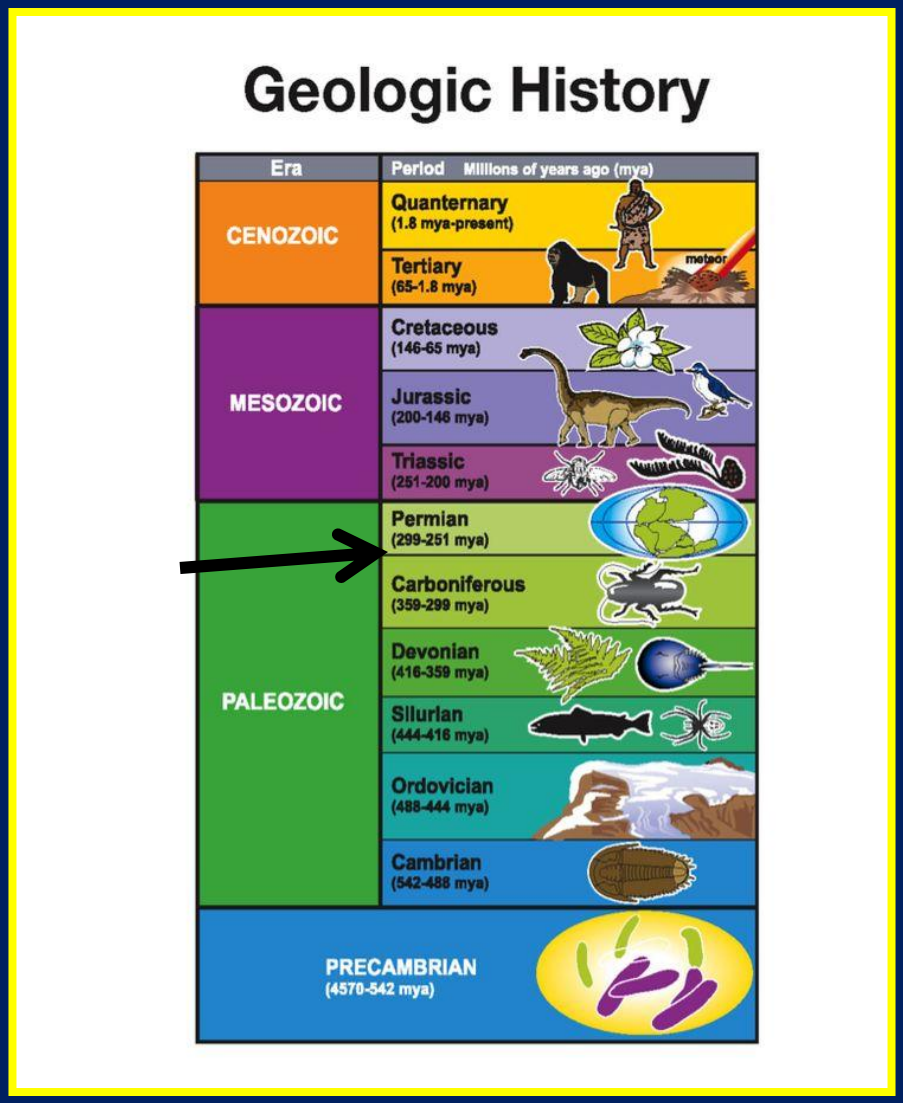
How could entire continents move?

Alfred Wegener

The idea of Continental Drift was first proposed by Alfred Wegener in 1912

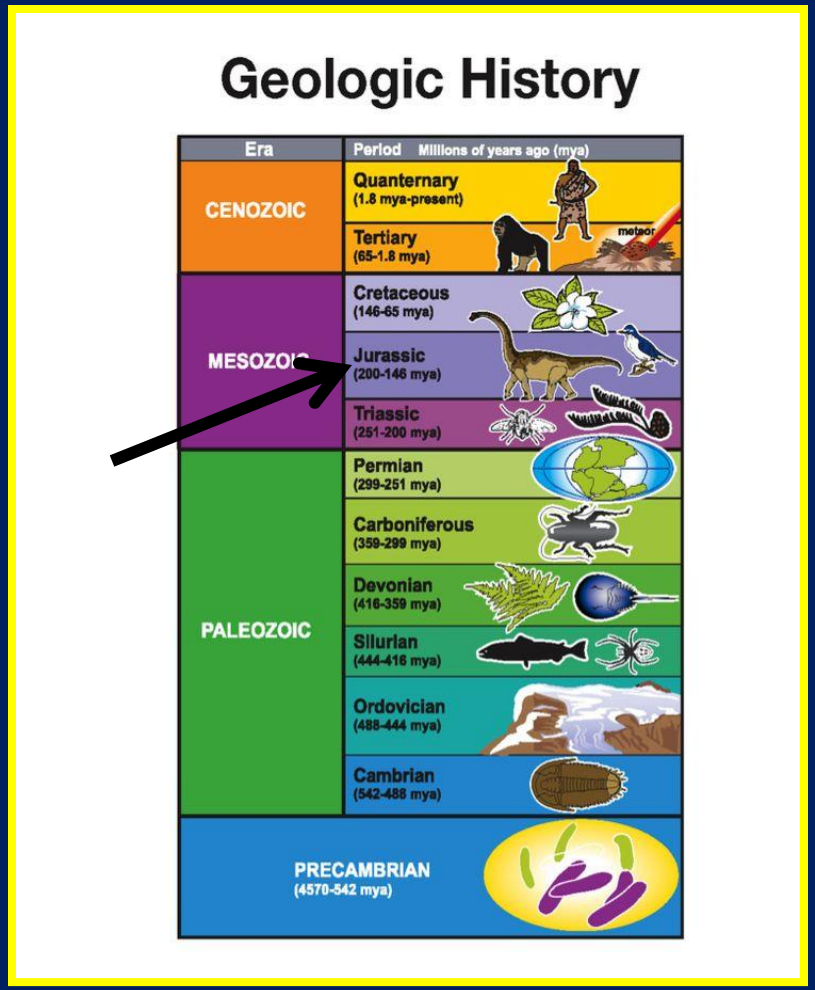
Pangaea

Wegener proposed that about 300 - 200 million years ago, Earth's continent connected as a Super-Continent named Pangaea.



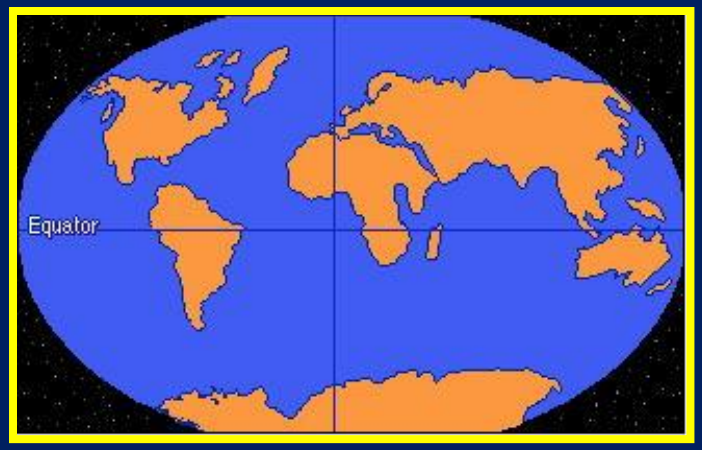
Laurasia and Gondwanaland

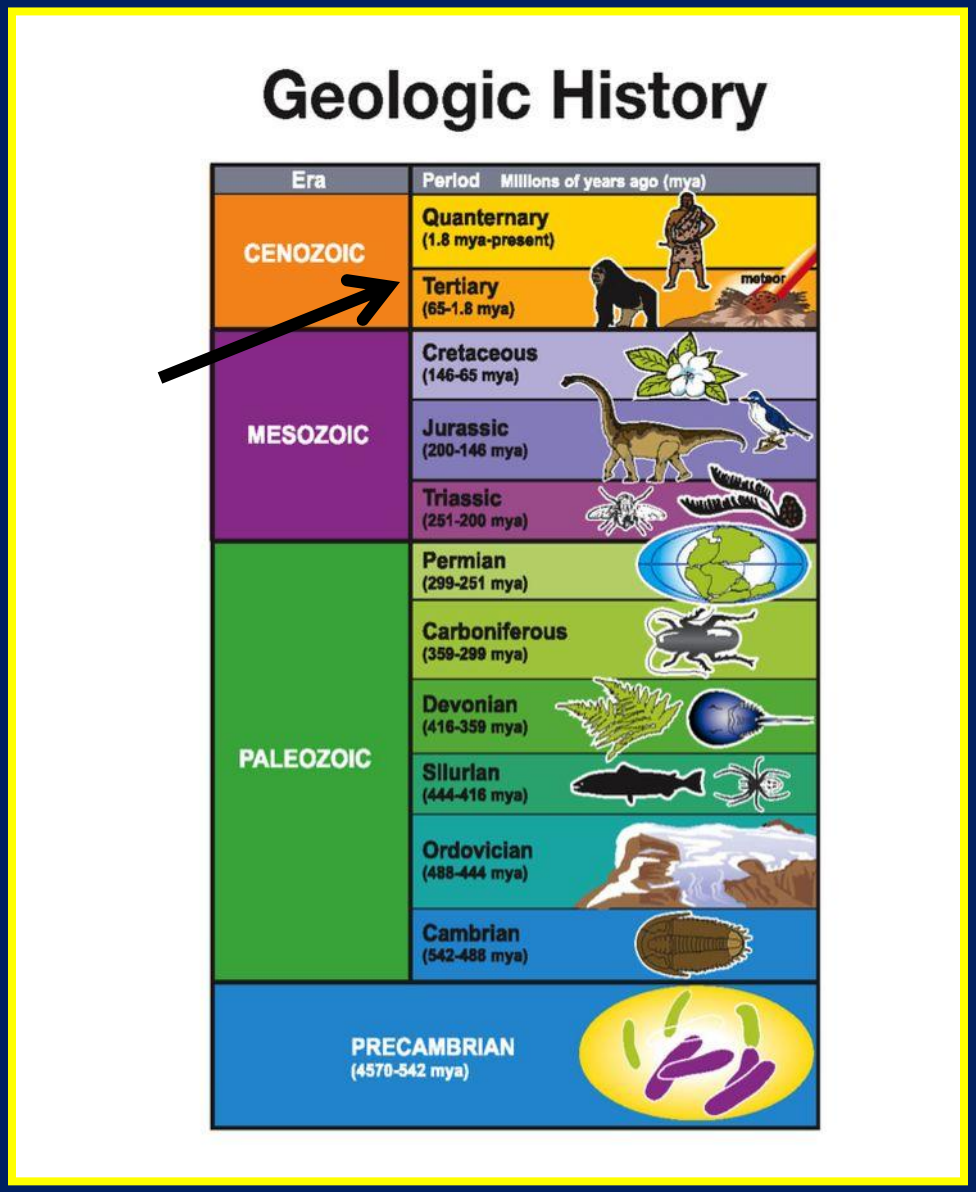
Then, about 200 mya, Pangaea broke apart into Laurasia and Gondwana.



Continental Drift

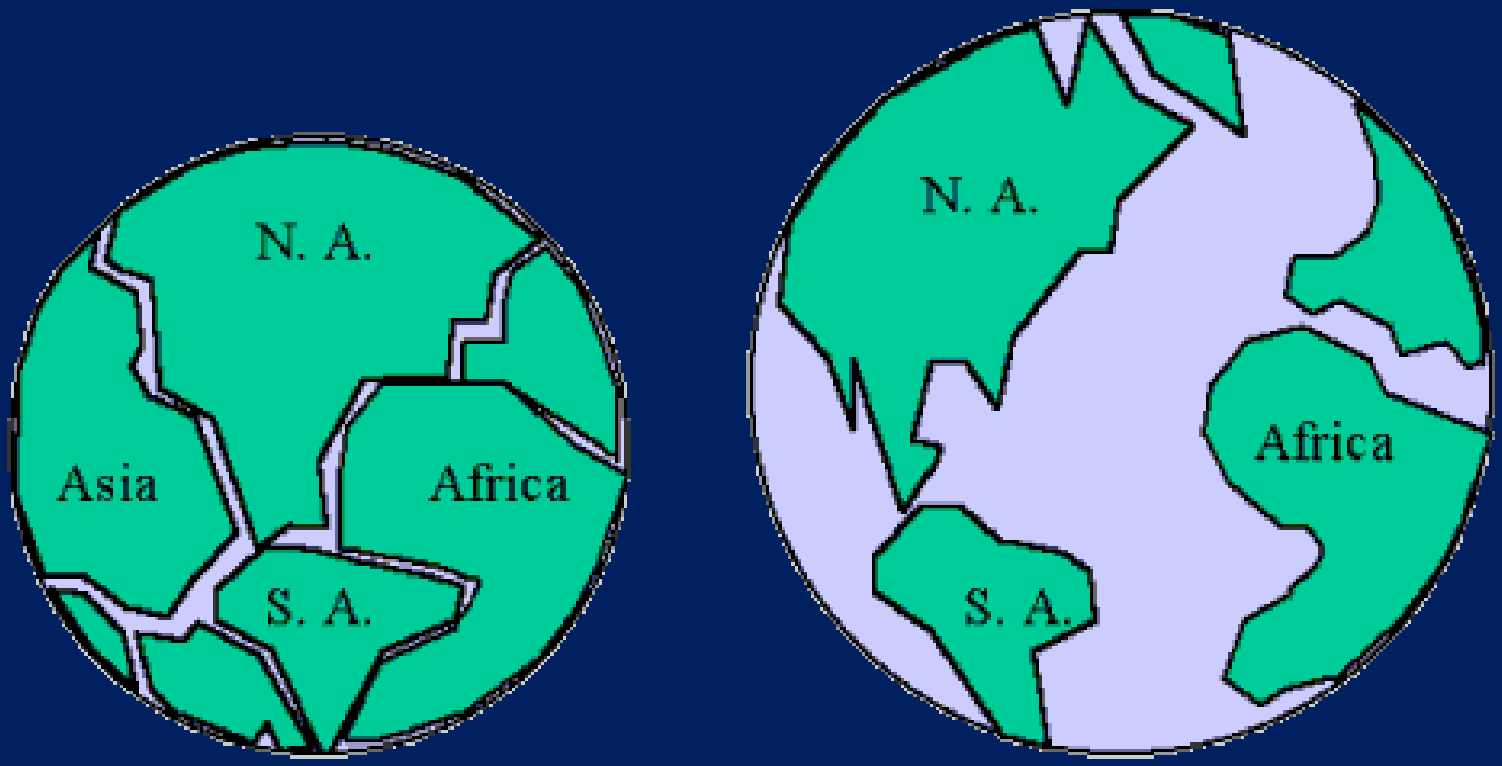
About 55 million years ago the Continents drifted to current position





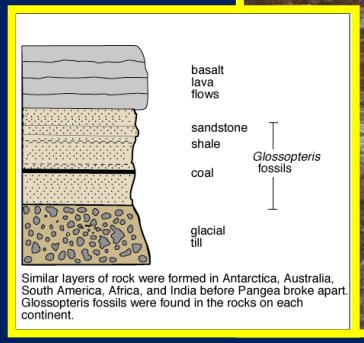
Evidence

Wegener's first piece of evidence for Continental Drift was that the edges of the continents fit together like puzzle pieces.



Evidence

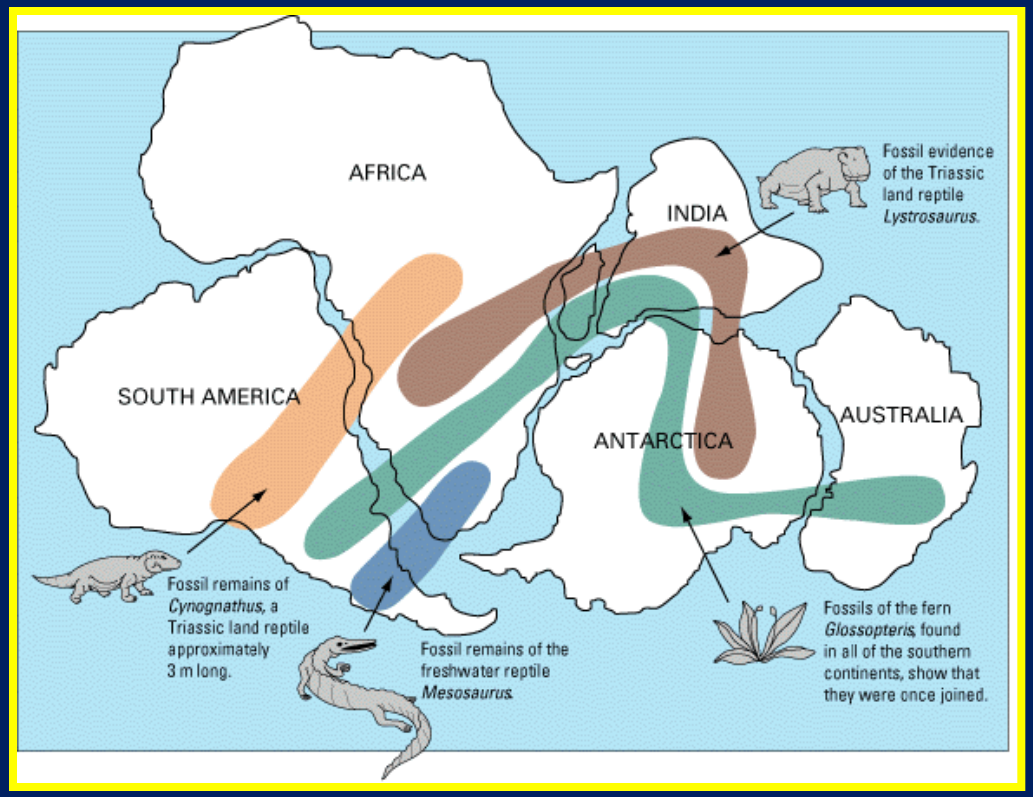
Wegener also noted that similar rock formations on could be found opposite sides of the ocean.



Wegener reasoned they must have formed as the same mountain chain that was later separated.

Evidence

Wegener also noted that the presence of similar fossils on different continents also suggested that the continents must have once been joined.

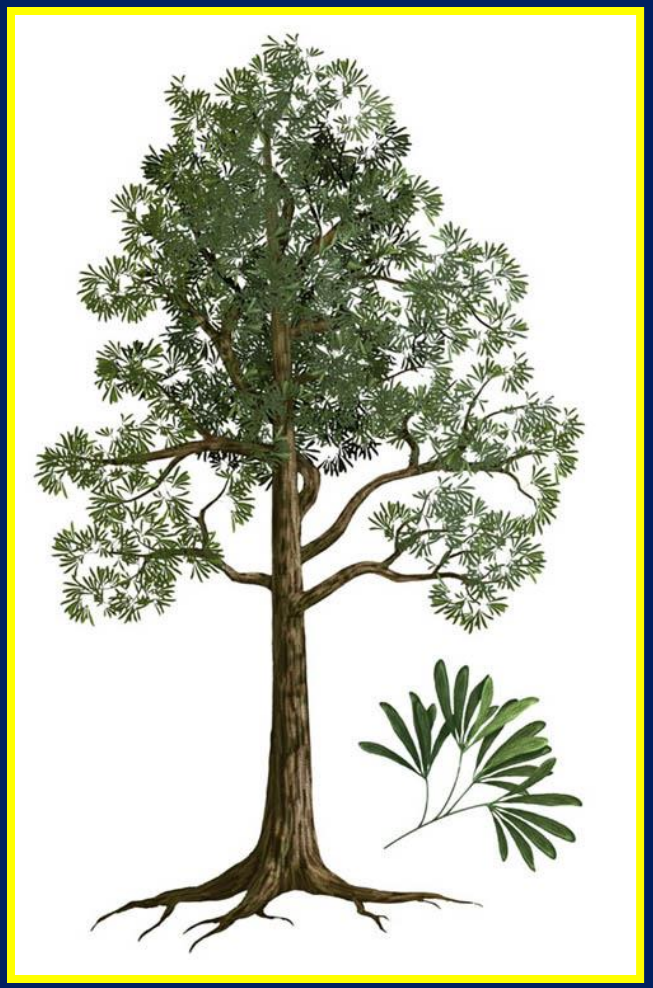


These fossils were land dwelling animals and could not have swam across the oceans.

Evidence

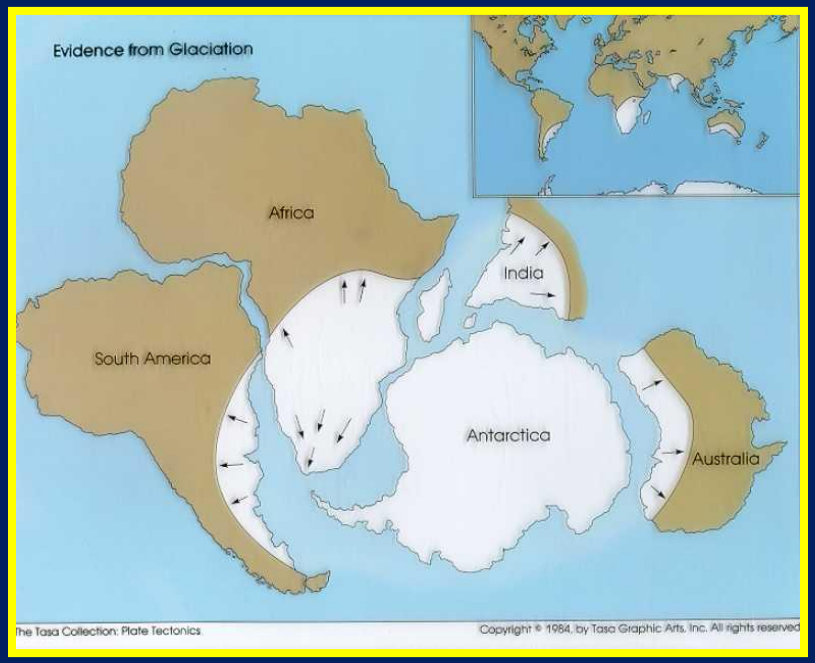
Wegener also found fossils of a fern type plant. called Glossopteris, all over former Gondwanaland.

Being that this area is too large to support only one climate, the continents that made up Gondwanaland must have been joined together at one time.



Evidence

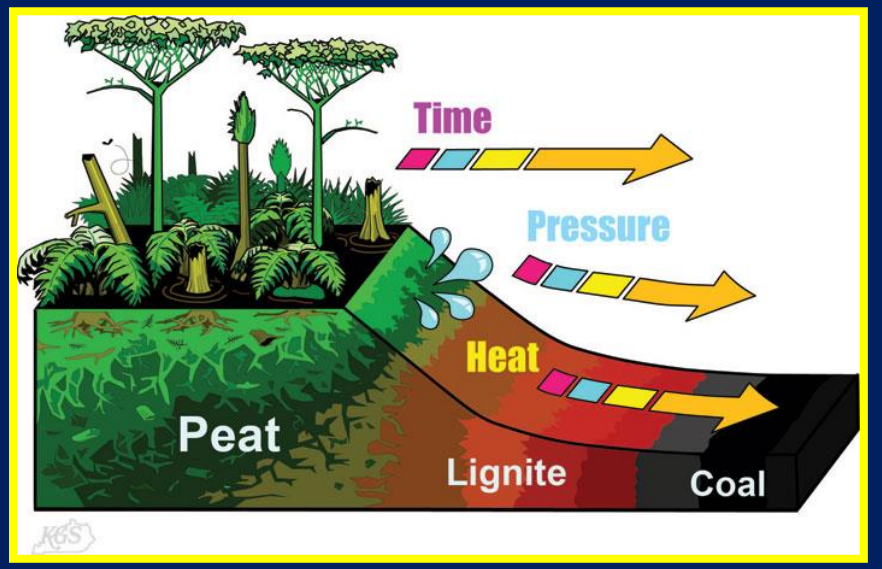
Wegener also found glacial deposits found in Africa, India, and Australia, areas known for their warm climates.



This suggested to Wegener that the continents must have been located closer to the south pole and later moved to their present location.

Evidence

Wegener also found Coal deposits in Antarctica.



Being that coal is formed from ancient swamps in warm climates, he reasoned that Antarctica must have once been closer to the equator.

Hypothesis Rejected

Even with all this evidence, Wegener could not explain what force could be large enough to move the continents, so his hypothesis was rejected by the scientific community..

Wegener, on the right, died on an expedition to Greenland in 1930.

The End